

Pirinsko Pivo Brewery Project

Location: City of Blagoevgrad
Type: Energy efficiency and production line improvement
Size: US\$2,700,000 in annual sales
Funding: Total: US\$406,000
 Private: US\$406,000, partially guaranteed with United States Agency for International Development (USAID) mechanism
Objective: To reduce energy costs and increase market penetration.
Duration: 2000–2001
Scale: Urban

Summary

This project consisted of establishing energy-efficiency measures at a medium-sized, joint-stock company brewery, which significantly reduced annual electricity consumption and heavy oil consumption. These energy savings translated into a 6.4% average decrease in product costs, allowing the brewery to price its products more competitively and increase its market share from 4.5 to 9.5% in two years. Significant emissions reductions also resulted from more efficient operations and reduced fuel consumption.

In-Country Principles That Attracted Nondonor Financing

- Capacity building and informed decision making
- Public participation in, and support of, sustainable development

A key principle that attracted private financing was the ability of the firm to operate under standard commercial practices. Such practices included improved cost recovery, meter-



ing systems, and maintaining financial records consistent with international accounting standards.

Study tours and dissemination of best practices helped increase awareness, knowledge, and skills of sector professionals in technical areas such as cost-based pricing, international accounting standards, and competitive energy market operations.

Increased public knowledge of, and participation in, energy decision making — accomplished largely through outreach programs — were also important. Activities contributing to this increased knowledge and participation included institutionalizing sustainable education, communication, and outreach programs through capacity building and innovative financing.

Financing

Total project costs were US\$406,000. The Pirinsko Pivo Brewery provided US\$106,000 in equity, and the United Bulgarian Bank (UBB), a private, commercial bank, provided \$300,000 in debt financing. USAID provided a 50% Development Authority Guarantee for the loan, which allowed for risk sharing and, consequently, for the bank to make a longer-term loan under commercial rates.

The Project

In 1997, the Pirinsko Pivo Brewery was registered as a joint-stock company. At that time, its market share was 4%. To obtain a greater market share, the company realized it needed to reduce its costs, and particularly its energy costs. A comprehensive energy audit showed that the brewery's energy costs were considerably higher than those of its competitors. To reduce energy costs, the brewery developed a strategy to speed up implementation of an integrated energy-efficiency system.

The implemented energy-efficiency measures resulted in a 27% savings in electrical energy, 35% savings in heavy fuel oil, and 1% savings in production-related water consumption.

Technical Data

Several energy conservation measures and technologies were implemented. These included the following: devices enabling measurement information to be fed into a computer system for monitoring and maintaining energy consumption within prescribed standards; steam distribution improvements such as installation of reduction valves and highly effective

steam traps; refrigeration improvements, including change of the isolation and implementation of automatic control of the compressors; energy-saving lighting systems that included sectioning and automatic control; and air compressor replacement containing a new screw-type compressor that consumes 30% less power.

Performance Data

The direct energy savings helped reduce the final cost of a bottle of beer by 6.4%. This reduced product cost gave the brewery more flexibility in its pricing policy which, coupled with the increase in production capacity, led to a doubling of sales and market share in two years. Return on investment was 38%.

Carbon dioxide (CO₂) emissions due to heavy fuel oil burning were reduced by 35%. The level of production forecast for 2000 to 2004 is expected to result in the reduction of CO₂ emissions by 17,218 tons and sulfur dioxide (SO₂) emissions by 316 tons. During this period, water savings are estimated at 14,000 m³.

Participants and Roles

Participants in the project are Pirinsko Pivo Brewery, the beneficiary of the project; Energy Efficient Systems Ltd. (EES), which developed and implemented the energy-efficiency project; Electrotek Concepts, which developed the business plan and the loan application; and the UBB, which made the loan.



Partner Contacts

Edward La Farge
US Agency for International Development/Sofia
NDK Office Bldg., 1 Bulgaria Square, 1414 Sofia
Bulgaria
Phone: 359-2-951-5670
Fax: 359-2-951-5070
E-mail: elafarge@usaid.gov

Dimtcho Linkov
Electrotek Concepts, Inc.
3 Vassil Levski Blvd., 1000 Sofia
Bulgaria
Phone: 359-2-987-1903
Fax: 359-2-987-1903
E-mail: dimtcho@tusk.icn.bg

Michael Velikanov
Electrotek Concepts, Inc.
2111 Wilson Blvd., Suite 323
Arlington, VA 22201 USA
Phone: 703-351-4492, Ext. 125
Fax: 703-351-4495
E-mail: mvelikanov@electrotek.com